

# GEOMET® zinc-flake technology: the cutting-edge solution to protect chassis parts

*As automotive industry is moving to lighter weight solutions to reduce its carbon footprint, new materials and coatings are required to achieve higher performance with more sustainable product and process engineering. GEOMET® zinc flake coating is non-electrolytic and offers excellent galvanic protection, making it a remarkable alternative to conventional solutions at thin layers to protect chassis parts.*



\*GEOMET® low control arm as part of the front axle

Today's chassis engineers pay increased attention to corrosion protection, as during service life, chassis parts are exposed to critical environmental conditions like dirt, stone chipping and water in combination with salt during the winter period.

\*Rack with GEOMET® parts coated at Aragonesa de Tratamientos, Zaragoza - SPAIN



Standard process for chassis parts frequently consists of stamping of pre-galvanized metal sheets, welding and e-coating. As lightweighting is a key driver, especially with electrical vehicles, the switch to higher tensile strength steel allows reducing the metal thickness. Moreover, this brings various critical issues regarding process engineering and corrosion protection of the parts, such as:

- Welding on pre-galvanized steel creates critical issues regarding welding porosities and potential liquid metal embrittlement.
- Welding on pre-galvanized steel creates harmful fumes in the factory and reduces productivity due to welding speed limits.
- Hollow areas cannot be properly coated with electrolytical processes and edges are less protected, with again a higher risk of corrosion in use.
- Scraps of pre-galvanized steel are sold at a significantly lower price than scraps of blank steel.
- Addition of plastic protection or extra layer for highly stone-chipped areas increases total cost of ownership.

A new solution for chassis parts is GEOMET® waterborne zinc-flake technology from NOF Metal Coatings Group, which addresses all above listed issues while increasing significantly the corrosion protection with a thin layer of 10µm.

GEOMET® surface allows laser marking directly on the coated surface to avoid labelling that requires extra operation and quality risk with sticking issues (>1500h NSST after laser marking).

GEOMET® increases thus steel parts lifetime while reducing complexity in the manufacturing process.

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## Reliable and competitive technology

Looking to functional benefits, one major French OEM has approved GEOMET® on a low control arm after extensive internal corrosion, fatigue and driving testing. The results of all tests exceeded the expectations and the outdoor weathering test in marine atmosphere as part of a “real-life”-scenario has been running till today for over 50 months without any signs of corrosion.

In close collaboration with a Tier 1 parts manufacturer, this low control arm is manufactured near Zaragossa and coated on a fully automated production line in, at Aragonesa de Tratamientos and sent afterwards to the carmaker for final assembly.

Several car models from different brands built on the same platform are equipped with this part.

Till today, this control arm has been running successfully in the field for almost two years of serial production. Over 280,000 cars will be on the road with this part till end of 2020 with a booming demand for the upcoming years.

Based on this success story, other OEMs are now convinced of the proven added value of GEOMET® and NOF Metal Coatings Group is today in various trials activities with major carmakers for potential industrial projects.